The Alberta Machine Intelligence Institute

140 researchers
Including 11 Canada CIFAR AI Chairs

200 technologies
Including algorithms, applications & theories

49 industry partnerships
Including Climate Corp, Imperial Oil & Servus

- Founded in 2002 as the Alberta Ingenuity Centre for Machine Learning (AICML)
- One of Canada's three AI centres of excellence established through the Pan-Canadian AI Strategy (https://www.cifar.ca/ai/pan-canadian-artificial-intelligence-strategy)
- 150 staff, students & researchers
    - 22 primary researchers (including 11 Canada CIFAR AI Chairs)
    - More than 25 staff members & research associates
    - More than 110 MSc & PhD candidates and post-doctoral fellows

Industry Engagement
- Engaged in 49 formal industry partnerships
    - 2 Research Chairs in AI created by industry partners at University of Alberta
    - $21M to Academic Research from Industry
    - 13 research faculty engagements with industry
    - $2M in Industrial service contracts
- Since inception, garnered over $150 million in cash, in-kind and grant funding
    - $28.5 million invested by the Government of Canada
    - $45 million invested by the Government of Alberta over the past 18 years
- $115 million in Venture Capital funding raised by Amii-affiliated companies
- Additional $334 million in Venture Capital funding raised by Amii alumni in Canada
- Enabled $25 million in outside investment in new jobs and economic impact within Alberta since 2016

Research Excellence
- World-leading academic research group in the AI subfield of reinforcement learning and home to Dr. Richard Sutton, the field's pioneer, and leaders like Michael Bowling, Dale Schuurmans and Csaba Szepesvári
- Over 200 technologies created since inception (including algorithms, architectures, theories, methodologies, approaches and applications)
- Instrumental in helping the University of Alberta develop into one of the world's top five academic institutions for AI and machine learning research[1] and Canada's leading institution for AI and machine learning research[2]

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[1] http://csrankings.org/#/fromyear/2008/toyear/2018/index?ai&mlmining&world
[2] http://csrankings.org/#/fromyear/2008/toyear/2018/index?ai&mlmining&canada

Notable Scientific Advancements
- **UCT Algorithm (2006) –** Foundational machine learning algorithm at the heart of many recent advancements in games research *(Szepesvári, et al)*
- **Chinook (2007) –** Checkers solved by the first computer program to win the world championship title in checkers in a competition against humans *(Schaeffer, et al)*
- **Arcade Learning Environment (2013) –** Software platform for evaluating the general competence of AI algorithms *(Bowling, et al)*
- **Cepheus (2015) –** First AI to solve the game of Heads-Up Limit Texas Hold'em *(Bowling, et al)*
- **BLINCDev (2016) –** Open-source community centred around robotic technologies developed at UAlberta *(Pilarski, et al)*
- **DeepStack (2017) –** First AI to beat human professionals at Heads-Up No-Limit Texas Hold'em *(Bowling, et al)*

Education & Community
- Conducted 20 reskilling/upskilling training sessions with over 500 participants (since Jan 2019)
- 3050 attendees across 49 events since 2018
- 300 Students from 36 countries for the 2019 CIFAR Deep Learning Reinforcement Learning Summer School
- 23,000+ Students through online training courses since August 2019
- 110 Graduate students currently enrolled with Amii Fellows
- 40 students graduated since 2017
- Hosted over 100 machine intelligence literacy and community engagement events with over 4,500 attendees (since July 2019)

Active Research Projects *(select)*

- Information extraction and visualization tools for medical and legal domains
- Ana - Automated Nanny Agent
- Adaptive Prosthetics Program
- Patient-specific survival prediction, psychiatric diagnosis and treatment
- Advanced analytics for the sport of curling
- Atari 2600 game learning for general competency of AI

Direct Industry Collaborations *(select)*

- 2S Water
- ARC Resources
- Cognitive Diagnosis
- Dot Technology Corp.
- Drugbank
- EHS Analytics
- FORCORP Solutions

- Frettable
- Hoot Research
- Imperial Oil Limited
- Integral Engineering
- Medo.AI
- Mikata Health Inc.
- Net Energy Exchange (NE2)

- OKAKI
- SAM
- Servus
- Synauta Inc.
- Testfire Labs
- Willowglen Systems Inc.

Amii Educational Courses *(select)*

- **ML Technician Certification** – Developed and taught by machine learning experts from Amii and the University of Alberta, the ML Technician Certificate program helps Albertans enter in-demand careers in AI by teaching how to construct a basic ML model, make informed decisions related to data, and articulate an ML framework to support business outcomes.
- **Coursera MOOCs** – Machine Learning: Algorithms in the Real World Specialization teaches technical managers how to master techniques for implementing a machine learning project; Reinforcement Learning Specialization teaches scientists and technical staff how to implement a complete reinforcement learning solution and apply AI tools to solve real-world problems
- **UAlberta Faculty of Extension Courses** - The Machine Learning for Managers Series provides managers and domain experts with the knowledge, skills, and competencies needed to understand the role of AI and ML in business, and how to manage ML projects